Education and Research Activities

Research groups of the department of industrial design are as follows.

❒ Product & Environmental Systems Design Research Laboratory

This laboratory focuses on product & environment system (PES) design research for the richness and comfort of humans. Major research interests include environment system design, emotional design and robot design. The PES lab has interests in various relationships and functional disorders generated from the product and environmental systems, and tries to solve design problems through interdisciplinary courses with emotional engineering, cognitive science and psychology. Also, PES lab conducts research on motional approach to robot design and develops robot design guidelines through a study of the robot's behavior, correlation analysis and human-environment conflict. Representative research projects include "research on design systematization and industrialization of urban environment equipment", "cultural comparison among Korea, China and Japan," "development of emotional robot," "development of design guidelines for humanoid robot," and "development of elder's daily life support robot design."

❒ Design Management Laboratory

Along with the comprehension of design as a competitive business resource, a body of knowledge on design management is also studied. Various theories and practices concerning strategic design management, which utilize design as a key component for creating the value, are treated. Scientific solving of wicked design problems, identifying new product opportunities and design concepts, analysis of customer's perception and preferences, optimizing the design evaluation are studied in conjunction with national and corporate design projects. Main research issues are as follows: National Design Promotion Strategy, Corporate Design Management System, Design Management Consulting, Design and Intellectual Property, Designing the Brand Equity, and other relevant issues.

❒ Digital Media & Contents Laboratory

Technological environments transform everyday life into the culture of digital media & contents, and values of design industry depend on improvement of communication, production of digital contents, and development of media interaction. Digital Media & Contents Lab develops a new concept of media interaction & contents, based on its own design process and knowledge of digital technology. Web interface, information presentation, tangible entertainment media, multi-modal interaction and design prototyping are researched with the purpose of defining various possibilities of digital design through a designer's way of thinking.

❒ Human-Centered Interaction Design Laboratory

HCIDL (Human-Centered Interaction Design Lab) focuses on planning and developing human-centered interaction through in-depth research for physical, cognitive, emotional, and socio-cultural aspects of human beings. Research interests include 'Design Planning' for developing innovative design strategy and concept through user-centered design, contextual inquiry, and future research; 'User-Interface Design' which focuses on developing and evaluating user-interface design by understanding a user's cognitive information process: 'Emotional Design' for a user's emotional satisfaction; 'Cultural Design' for reflecting a user's socio-cultural characteristics on design. In order for systematic application of research interests, HCIDL develops diverse design tools and software such as video-annotating program for user-observation, remote usability testing program, mouse tracking software, wearable camera for understanding mobile-user's behavior. HCIDL is harnessed with state of art facilities including usability testing room with full equipment of video recording and observation tools, gaze analyzer, and portable ethnographic tool kit for user-observation.

❒ Collaboration and Interaction Design Research Laboratory

This laboratory investigates research issues of collaboration and interaction from the design perspective. Collaborative designs are concerned with the tools, methods and environments to achieve better design quality by working together with other designers, other professionals and end users. Interaction design is in the upper level of collaborative design. Interaction is understood as a cyclic process in which two actors alternatively listen, think, and speak. In this respect, the research laboratory focuses on new tools and techniques to facilitate seamless and efficient human-human and human-product / system interactions. With the design methods investigated, the research also addresses real product and interaction design problems. Representative research and consultancy projects include 'the development of prototyping tools for designers', 'case studies of remote participatory design workshops', 'augmented reality-based collaborative 3-D CAD system and intuitive modeling interface,' 'new concepts of home appliances,' and 'information architecture generation tool for consistent software interface identity.'

❒ Design Media Laboratory

The advent of new media has exchanged human lifestyle, thinking style, and the style of form. Design media is the hardware and software employed in developing design ideas. Technological innovation in design media facilitates new ways of designing. The Design Media Laboratory investigates the useful applications of emerging technologies which can augment designer's creativity and enrich human life. Currently, our research activities are focused on hyper design media and tangible communication media. Hyper design media combines both the versatility of digital tools and the tangibility of traditional design material using augmented reality and physical computing technology. We think of products as tangible communication media and investigate the way that enriches human-to-human and human-to-artifact interactions in ubiquitous computing environment using tangible communication media.